SUMMARY OF EPA WORKSHOP ON
ALTERNATIVE FUEL INFRASTRUCTURE

May 10, 2000 San Diego, CA

Disclaimer: This summary was based on notes taken informally at the workshop; they are not based on a verbatim transcription. We accept no liability for errors or omissions in the characterization of the dialogues presented.

PANELISTS

Keith Ciampa, World Energy (biodiesel perspective)
Joe Colanari, Propane Vehicle Council
Larisa Dobriansky, Akin, Gump, PC. (attorney for automobile interests)
Al Ebron, West Virginia University (EPA AF-related cooperative agreement recipient)
Steve Ellis, American Honda Motor Company
Rajeana Gable, GRI (formerly, Gas Research Institute. R&D on gaseous fuels)
Jennifer Hindman, AZ Department of Commerce, Energy Department
Lou Hisel, Clayton County Government (fleet operators)
Ruth Horton, New York State Energy Research and Development Authority
Paul Kerkoven, Natural Gas Vehicle Coalition
Phil Lambert, National Ethanol Vehicle Coalition
Jason Mark, Union of Concerned Scientists (environmental perspective)
Richard Parish, National Renewable Energy Laboratory, DOE
Tom Rhoads, Ford Motor Company
Paul Smith, PCS (consultants, fleet leasing)
Cindy Sullivan, South Coast Air Quality Management District (CA air quality region)
Susan Summers, Pennsylvania Department of Environmental Protection
Peter Ward, California Energy Commission

U.S. EPA MODERATOR

Debby Adler, Alternative Fuels Team Leader, Office of Transportation and Air Quality, National Vehicle and Fuel Emissions Laboratory

WORKSHOP FACILITATOR

Don Rheem, ICF Consulting

CONTEXT and PURPOSE

The purpose of this workshop was to facilitate a discussion on alternative fuels infrastructure development to identify what types of programs/laws are working, what types of things are not, and what types of things EPA should be doing to help promote alternative fuel infrastructure development.

WORKSHOP STRUCTURE

The workshop was organized into three hour-long panels. Each panel featured an introductory presentation by one of the panelists (pre-selected), followed by a facilitated discussion by all the panelists. Audience members listening to the panel had several opportunities to ask questions. At the conclusion of the panel discussions, there was a general discussion of EPA's next steps. Comments received after the workshop (from questionnaires and follow up conversations) are included at the end of this summary.

WORKSHOP SUMMARY

Introduction

David Rogers of DOE welcomed the group.
Each of the panelists introduced themselves, their interests and/or affiliations.
Debby Adler gave opening remarks on behalf of US EPA:

- environmental concerns drive EPA's interest in promoting clean, alternative fuels
- for the first time, a U.S. Agency (the EPA's Ann Arbor Laboratory) is a Clean Cities Partner
- this is the third workshop EPA has held with interested stakeholders, to exchange ideas and information on alternative fuels

Panel 1: *How can they build it so they will come?*

Presentation: Jason Marks, Union of Concerned Scientists

- Conventional cars and light trucks getting cleaner, more fuel efficient (SULEV, ULEV, ILEV, ZEV; hybrids, clean diesel, Tier 2 LDV emission standards, 2004/2007 HD emission standards)

- Why bother with alternative fuels?
  Air Quality
  - VMT growth overwhelming emissions reductions (automobiles 99% cleaner than pre-control)
  - many alternative fuels offer upstream emission (e.g., evaporative) benefits, relative to petroleum fuels. Is significant: LA modeling indicates vehicle upstream emissions of

petroleum fuels are 6 times the tailpipe emissions of alternative fuel vehicles; if include the full fuel life cycle, the upstream emissions of petroleum fuels are 16 times the tailpipe emissions of alternative fuel vehicles.

- alternative fuels can replace diesel in heavy duty vehicles, reducing toxics and diesel pollutant emissions
- alternative fuels less threat to water quality (oil spills, gasoline additives)

Oil Dependence
- offers consumers diversity of goods
- offers consumers protection from disruptive impacts of oil crises, price hikes, etc.
- national energy security concerns

Climate Change
-currently-available alternative fuels can provide immediate reduction in greenhouse gas (GHG) emissions
- AF use can pave the way to further renewable fuel feedstock development, for greater GHG benefits

- Alternative fuels part of a comprehensive strategy (energy, environment, economics and climate effects)
  - if consider just fuel economy, may get diesel hybrids (ignores economics of continued dependence on petroluem products, no improvement of environment effects)
  - if consider just air quality, may get gasoline SULEVs (ignores energy security, economy)

Panel 1: Discussion (bulleted items are summaries of what panelists said)

Facilitator: *Will new vehicle technology make AFVs superfluous?*

- There is significant R&D funding to develop advanced tech (>$50 million/year on 80 mpg car). Need to make a case to spend money on clean fuels.

- There is a need to educate public on "true" cost of petroleum use, in energy security, air quality and climate.

- Public is reactive to oil prices, but federal government needs to work proactively; not wait for a crisis -- the reactive mode creates short-sighted, ineffective public policy.

- Alternative fuels won't grow unless there is support from the oil companies, and they will become involved only if they can make a profit from such fuels.

- Not just the public, but policy makers and business people must understand the issues. The potential exists to achieve emission levels "orders of magnitude" beyond ULEV, then transfer to heavy duty vehicles.

Facilitator: *Mixed messages, and the public doesn't get it?*

- Federal agencies are focused on the R&D. Automobile companies should focus on consumers – e.g., every automobile ad could have a tag line saying AFVs are available .

- Auto manufacturers face infrastructure barriers. They are working with big fleets that are capable of creating infrastructure demand.

Facilitator: *So lead with infrastructure?*

- Business will find a way, if there is a demand. If the pressure is kept on fleets so that they must use AFVs, capital will follow.

- But auto manufacturers lose money on AFVs. Without an EPACT private/municipal fleet rule, economics will continue to drive decisions. Need both incentives and mandates.

- Proponents of alternative fuels send mixed messages. They ask businesses to voluntarily use these fuels, but hold out the threat of mandates. And there is lack of understanding on how AFV use impacts business. If businesses begin to use AFVs voluntarily, will government turn around and mandate it? As long as EPACT can consider mandating private fleets, it is a hammer, and business will be leery.

- Lack of time and misinformation are barriers to AF use. Feds and enviros need to do a better job of addressing AF issues, coherently and consistently.

- Clean Cities 2000 plan shows need for reoriention. General Accounting Office (GAO) report on EPACT shows the top-down approach isn't working. Need a bottoms-up approach, funding local/grassroots efforts. Could use Internet and e-commerce to educate the public.

- Private interests don't pay for "public goods," so economic arguments aren't appropriate for externalities. Mandates are a <u>market correction</u>. Plus - the government gives the oil companies lots of money. The government should put alternative fuels on a level playing field and give them money, too.

- U-Haul has actively promoted alternative fuels infrastructure. But it needs the real-world vehicles. For example, alt fuel SUVs are too bulky. Alt fuel pickups have a loss of utility,

because the size of the propane tank takes up room. People rent pickups for the space, and some capacity is lost.

- Cities' codes could require that every contractor bid include alternative fuel infrastructure, and could offer incentives to help. Plus, it is cheaper to do it in new construction, than as a retrofit.

- Cost matters. Cars are $20K. People want to go with what is tested, and true, and they don't want to pay more for AFVs than for conventional vehicles. So if fleets are subsidized, the government must offer tax incentives.

- Need incentives for infrastructure, also. But must be more flexible, so AF proponents aren't pigeon-holed

- Incentives? Look who is here. The Original Equipment Manufacturers (OEMs), the AF providers, the public. Where is American Petroleum Institute? Where are the independent petroleum retailers? Must encourage station owners to sell more than gasoline. But, as alternative fuel sales go up, the bread-and-butter sales of gasoline may go down. So need incentives or mandates for fuel refueling sites.

- Petroleum is where the profits are. Alternative fuels can't move forward, without the oil industry's support.

- The oil industry sells one product. It is a large industry, consolidated around one goal – sell oil. The alternative fuel industry is fragmented, with many products and multiple goals. If OEMs try to build vehicles for each of these alternative fuels, it will be very expensive. This is a barrier.

- The California experience shows that even with existing infrastructure (E-85), the fuel doesn't sell enough to be profitable. We want to keep these open, but we don't want to have to keep providing incentives. EPACT needs to make alternative fuel use mandatory, and without alt fuel use in an AFV, that AFV doesn't count toward EPACT credit.

- Need incentives for agri-business, to develop cost-competitive feedstock. Would provide economic development, energy security and diversity, bio-remediation, bio-fuels, and bio-engineered crops with improved production.

- Going back to an earlier comment about the money spent on Partnership fo New Generation of Vehicle (PNGV). PNGV has done great things. Can we get the petroleum industry, OEMs, and government to the table, for a PNGV-like partnership for alternative fuels?

- Federal government has had fuel neutrality as a principal. As a policy, fuel neutrality is good. As business, it is bad. Economies of scale can't develop, if there are too many fuel options. Fleets need to decide upon a fuel "winner" and stick with it. It's like the Beta-versus-VHS argument. Beta's were better, but that didn't matter. How do OEMs feel about fuel neutrality?

- OEMs can't pick a winner at this time. There may not end up being a single winner. In some areas, different fuels may work better, and in others, other fuels may be better. OEMs want to be able to compete in all markets

- One auto manufacturer has chosen to focus on the alternative fuel that we think has the greatest potential in the short, mid, and long-term - CNG. Fuel neutrality is a barrier to success. In those markets where one fuel makes sense, we should pick a winner

- The natural gas industry did a "unified business strategy" a while back. We could document the key success factors. It came down to the "mystery investor." Where is the money? How to get market sustainability? This still may not be answered for alternative fuels.

- In Florida, the alternative fuels were competing. Florida Clean Cities decided that the alternative fuel interests must team together. They formed an alternative fuel advisory board which included fuel providers, utilities, OEMs, Clean Cities partners, etc. The advisory board made petroleum a member, and put them on the advisory board - by a Florida law. So they are at the table.

- OEMs need to focus on something. They say, "where's the market?' e.g., what fuel? Well, the real market is fleets. That's where we should put the infrastructure and vehicle incentives. If focus on the market, the money will follow.

- It all comes back to economics. China's alternative fuels program is going forward, because the government said that it is. They have no choice. They are using the hammer. But that won't happen in the U.S. In Brazil, taxis are lining up to use CNG. Why? $800 fuel cost savings. So in a free market, economics is the driver. Big oil will come to the alternative fuels table when they can make money.

Panel 2: *Do market incentives work?*

Presentation: Susan Summers, Pennsylvania Department of Environmental Protection (AF incentive grant program)

- There are so many good alternative fuels. States want to be fair to all of them, but this variety is a barrier. It helps to have federal mandates in the background – "do it, or else."

- Incentives work. The more money, the better. But also need : technology options; top-level commitment; adequate, consistent funding; adequate, consistent administration; and follow-up.

- PA used a grant program, as provided for in a section in our air quality bill. The money comes from the general fund. This is largely funded by utilities' revenues - utilities collect annual gross receipts taxes. This tax is being eliminated, though. Why funded from utilities? The clean air and oil security rationale.

- Funds could be used for refueling stations, vehicle purchases, conversions, and R&D. In the early years, most money was spent on after-market conversions. Left a "bitter taste," (retrofits not that effective). Now, focus is shifting toward R&D, and from conversions to OEMs.

- PA has a high interest in CNG. Some interest in E-85 and flexi-fueled vehicles. OEM EV's have moved from purchased vehicles to leased vehicles. But, when the incentives go down, applications for grants decrease.

- Independent petroleum marketers make good alternative fuel partners (not oil-owned dealerships).

- Other barriers: grant applications are limited to niche markets. Need staff to oversee. There are delays in the delivery of AFVs. If we want infrastructure, we need to buy lots of AFVs!

- Incentives do work! Alternative fuels wouldn't be in PA, without incentives.

PANEL 2: Discussion

- In Arizona, the legislature used grants and tax credits to build refueling stations. Independent gasoline retailers seem to be at the forefront. AZ elected officials are driving this. Started small, built up with strong support from the natural gas industry, and the [regulatory] flexibility to use grants and tax credits. Now, Arizona is working on a universal refueling card.

- One issue – state incentives count as ordinary income to the federal government.

- In CA, value of state incentives are also decreased by federal taxation. So, are incentives necessary? Yes. Are they sufficient? No. We need to motivate "early adopters." And stability at the governmental level is important, to educate policy makers.

- Also, need more evaluation on the best ways to get the money to people. For example, could we tie incentives to specifying an alternative fuel vendor to a contractor? And which incentives are most effective – e.g., maybe a sales tax break on the incremental difference of alternative fuels versus conventionally-fueled products. If we try things that don't work, it just muddies the water. So, we need to evaluate better the effectiveness of incentives.

- There are more than just financial incentives. There are ancillary benefits – attracting new customers (e.g., at fueling stations, more customer throughput, leads to more overall sales of related goods and builds customer base), good public relations, use of HOV lanes, quieter vehicles, less stinky or harmful for vehicle operators, etc.

- A barrier to using incentives is the tremendous variation in alternative fuel incentives from state-to-state. Federal leadership would be helpful, to reduce this patchwork of incentives.

- Effecive incentives must be simple to administer, get to the right person, etc. Sometimes the difficulty of getting incentive-based legislation passed outweighs the benefit of that incentive. Incentives must also be significant enough to be worthwhile. For example, on an incremental AFV price difference of $5K or higher, a $2K incentive is not significant enough and becomes a barrier. Incentives should be tiered to the benefits. For example, reward the OEMs that do better on emissions, or on distribution of AFVs (not just to CA or AZ)

- Even fleets that want to buy AFVs, find the grant process so difficult, that it's not worth it. The federal grant requirements disadvantage small fleets, because only large fleets can afford the manpower to get the grants. So have to simplify the grants. And use broad-based incentives – e.g., registration fee waivers, or tax credits. Can't start a forest fire with a pinpoint laser light.

- Broad-based incentives for fleets? DOE (NREL)'s analysis shows that fleets have only 10% of the vehicles on the road. Private owners account for the other 90%. If you really want to penetrate the market, must give the public incentives.

- Could tailor incentives to the target market – whether the public, or fleets. Look at EV's – they are leased, because the OEMs assume the [public's] risk. Tax incentives are simple (appeal to the public), but for businesses, they don't even show up (on their bottom line) because of how business does its accounting (gets absorbed in the capital acquisition cost). So it is "de-incentivized." Regarding infrastructure, if a company has a driver hunting around for an alternative fuel station, that is $150 - $200 an hour lost revenue, in the cost of the driver, equipment time, and the people "backing up" the on-road guys. So, have to target/tailor incentive programs.

- Regarding grants, the biggest problem is the lack of [operations] information about alternative fuels. Could the grants be structured to provide more data on AFVs? For example, it could require grantees to use the alternative fuel 50% of the time, and then to report on any problems during that time. It would be more time-consuming to administer, but it ultimately benefits the grants program

- For government fleets, grants work better. For private fleets and industry, tax credits work better. It's not enough just to build it – they won't come. But if have the OEM vehicles built, and offer incentives, does work.

- What about government fleets? How should we focus on them? Grants must be simple and flexible, but, environmentalists worry more about, will it work? Does the grant program deliver the "3 E" benefits? Is it accountable to national policy aims?

Facilitor: *Does simplicity work against accountability?*

- Simplicity and clarity are vital, to get the funding. But, you want to also work in environmental benefits. Can do this through a "tiered" approach. Need good measurement techniques – not just tailpipe emissions. EPA should develop accounting systems to measure environmental performance, including upstream emissions, toxics, greenhouse gases, air quality, and energy security.

- In AZ, incentives include rebates, HOV lanes, license tax break, and tax credits. For a SULEV, the cost could be reduced up to 75%. The cost of a Honda GX could be as low as $5,500.

- A tiered approach would help. Consider legislative fixes, but with a long-term view. Don't limit it to any particular technology, or fuel. Be performance-based, using the "3 E" goals (including life-cycle emissions).

- "Simple" grants for heavy-duty vehicles. Evaluate the relative emission benefits to diesel-fueled HDVs. For example, projected VMT multiplied by emissions benefits from the proposed vehicles, to get net projected benefits. Compare these among proposals to pick the grant winners

- The type and the target of incentives must help the alternative fuel distributor make money. The oil industry is vertically-integrated. So, must make a business case for petroleum companies to sell alternative fuel. But it is difficult, because alternative fuel sales will displace their oil profits. Suggest niche-focused alternative fuel marketing, tailored to the distribution channels of the specific fuel.

- Training is an important incentive. Offer it to the fleet operators. States could offer it.

- Let's do a political reality check. Tax legislation is written on Capitol Hill – not by EPA or DOE. We could spend years spinning our wheels. Even simple tax legislation takes forever. You have to work directly with the tax people, to get the job done.

- Incentives are mostly tied to vehicle purchase and fuel infrastructure. The AFV used, if have problems, needs maintenance and repair support. So, think of incentives expanded to the service technicians.

- We need more AFVs. OEMs sell AFVs in CA (because of ARB mandates), but not in other states. OEMs are powerful. They have powerful lobbies. Have the OEMs ever used that power to sit down with big oil and discuss the infrastructure problem?

- OEMs do work with the oil industry on petroleum issues.

- In one instance, Shell wanted to close down CNG stations. Honda and others worked on letter-writing campaigns. Now, Shell is reconsidering. So, there is a need for grass roots activities.

Facilitator: *Should EPA facilitate auto/oil discussions on AFVs?*

- We have vehicles. But fuel providers get burned. So they want a critical mass of AFVs. Need public demand, to build this critical mass. If the OEMs advertised their AFVs like they advertise their other models, the public would buy, and it would create economies of scale for the OEMs

- The public supports clean air, provided that they have the right choices. Incentives won't work without a targeted educational campaign. Price is NOT the only driver. People need the information, to make informed decisions. This includes public education by government, states, fuel providers, and OEMs. Yet, EPA has a total of $500K to do all the public education for all their mobile source programs. This is not adequate to support a comprehensive public education campaign.

- Alternative Motor Fuels Act (AMFA) Corporate Automobile Fuel Economy (CAFE) credits are the only reason OEMs are building AFVs. Maybe we need an AMFA-type credit for alternative fuel infrastructure?

- CAFE-type credit for the fuels industry? Only a tiny part of oil industry spending could help alternative fuels infrastructure.

PANEL 3: *Infrastructure "drivers" -- vehicles and fuels of the future.*

Presentation: Peter Ward, California Energy Commission (CEC) (worked with alternative fuel demonstration and commercialization in CA; has methanol refueling station experience)

- The oil industry doesn't want mandates, but without the threat of mandates, they will only do "cooperative" efforts, and these types of efforts can "strangle" a program.

- The CA experience with alternative fuel projects: did alcohol blends with Honda Civics (5%, 10%, 15%). Also, did neat alcohol using VW Rabbits. Most ethanol is grain-based, and CA didn't have enough grain, so chose to use methanol. The unanticipated benefits of this demo program included: led to a CA reform program, the CA-LEV program, etc.

- CA also ran dedicated Ford Escorts on methanol. Program was a technical success, but an "emotional" failure. Why? Created emotional problems for drivers. Not enough places to refuel. There were 11,700 gasoline refueling stations in CA, versus 18 methanol stations.

- To solve the "emotional" problem:
  - switched to FFVs
  - developed a CA methanol fuel reserve, to stabilize methanol prices
  - implemented cooperative agreements, to produce methanol stations for 10 years. 54 stations were created. (But after 10 years were up, only l2 left).

- CA also did CNG demos, with CNG infrastructure. Plus, OEMs wanted to do E-85, but no E-85 stations in CA.

- CA has a "clean, safe" school bus program. 826 pre-1977 diesel school buses were replaced by clean diesel buses, CNG buses, or methanol buses. Plus, the program provided seed money for infrastructure. ($5 million for AFVs, and $6 million for infra.)

- For an effective AF program, need:
  - a market assessment. What is the potential for clean fuels use?
  - workshops with stakeholders
  - set goals for inroads into the fuels market, based upon the evaluation and analysis
  - set and provide incentives. These could include "time" incentives – streamlined permitting, HOV lane access, etc.
  - incentives must be both <u>necessary</u> and <u>sufficient</u>. Many incentives are based on knee-jerk reactions, pork barrel projects, etc. Must be based on objective analysis, evaluation.
  - incentives must target fuels and vehicles.

- The goal of an AF program <u>must be</u> petroleum displacement. Especially in a tight refinery market (like CA), refinery capacity affects price.

- Can't afford to be fuel-neutral. Why? Because we can't afford to be emissions-neutral, and fuel choice affects emissions.

- Current alternative fuel programs: CA is assembling a technical advisory group, to get input on the AF market potential from now, through the next 10 years. This group will hire a contractor to do a market analysis. Then it will decide what incentives could accomplish what goals. It will follow up with an annual evaluation, so program participants won't have "stranded" investments.

PANEL 3: Discussion

- If we can't be fuel neutral, which alternative fuel is the "winner"?

- CEC response: By not being fuel neutral, I meant, not neutral between the choice of petroleum or an AF. I mean, petroleum isn't here [at this infrastructure workshop]. So the playing field [between petroleum fuels and alternative fuels] isn't level.

- EPA convened this workshop to get information that they can take back, to work on. What can EPA do? EPA can't do taxes, etc. So what is it? Could EPA bring oil to the table?

- Will California's alternative fuel program assessment include current incentives and their effectiveness?

- CEC response: Yes

- We all need to get behind all of these AF efforts. Because the minute Congress hears any dissent about a program, they will pull their support.

- We need the political will. Why not just regulate (i.e., mandate) alternative fuel use?

- There was work done in conjunction with NLEV, on incentives, and how to treat ZEVs in the Northeast. This was pulled to gether over 5 or 6 meetings. The NLEV deadline forced cooperation. If EPA could find those files, you could use them as a starting point.

- Incentives are structured such that grants go to government agencies, tax credits to the private sector. California has both kinds, and is reviewing it. For example, what happens if you don't make enough income to qualify for a tax credit? And in deciding whether grants are more effective than credits, must consider effectiveness, and accountability. Did the incentive accomplish what it was meant to do, re: emissions benefits.

- CAFE has "seeded" the vehicle side. There is no incentive for the fuels industry, other than those in place for existing fuels (e.g., no future drivers)

- If you wanted to give incentives to retailers, could it be grants? That would be giving public money to private interests. Provide grants as seed money. Think of it not as a gift to private interests, but as a gift to society. It is helping to provide a public good.

- For California's $500 methanol fuel use incentive, methanol AFV purchasers got a $500 credit towards purchases of methanol fuel, on a fueling card. This gets people into the car, got them used to using the alternative fuel. It was a fuel use incentive. It was available to both individuals, and fleets. But the fleets didn't use it.

- If you want to move beyond fleets to the public, how do you avoid "emotional trauma"? What's the market penetration percent threshold for alternative fuel refueling stations?

- People motivated to buy an AFV, would also probably want to use the alternative fuel. Oakride National Laboratory (ORNL) said the threshold to achieve an infrastructure is 10%, but I'd say 20% – 1 out of every 5 refueling stations, across the board.

- The public still thinks AFVs are "concept vehicles." To get Congressional action, you need the public to know about AFVs and to demand them. The public would buy AFVs, but dealers don't have the time to explain it to them. So OEMs, the government, everyone - needs to educate the public. Incentives in the form of rebates work the best. They are the easiest for dealerships to do.

Facilitator: *"Altenative" is typically considered a pejorative -- alternative lifestyle, for example. This is a major marketing challenge. We need nomenclature that captures the benefits of AFVs better.*

- Mandates inspire people to get creative about not complying. Incentives and grants make more sense. Don't forget convenience as an incentive.

- Why not sit down with the people who will make the capital investments that are necessary, and ask them what they need to be profitable, in order to structure effective incentives?

General Discussion: *What can EPA do?*

Facilitator: *What can EPA do to promote alternative fuel use, besides holding additional workshops with different stakeholders?*

- EPA could:
  - get more involved in AF incentives legislation
  - offer more technical support
  - engage the fuels [oil] industry. DOE is already involved with the fuels industry. DOE should invite EPA to the table
  - get involved in R&D to advance the emissions performance of alternatively-fueled vehicles – mostly HD, as the first priority, then LD – working with DOE, states, etc.
  - EPA can develop metrics to measure and compare the environmental gains from AF use. This could include full life-cycle emissions for the fuels and the vehicles, GHG emissions, water impacts, etc.

- What about a "Partnership for a New Generation of Fuels"? EPA, OEMs and fuel providers could all be involved. But would need other federal agencies, also.

- EPA could form a working group whose charter and mission is to figure out how to move forward on alternative fuels.

- I'd like to see EPA out front, in implementing the two new Executive Orders and legislation to "green" the federal fleets. I'd like to see an EPA "report card" on the greenness of its own, and other federal agencies', fleets.

- EPA needs to do public education on alternative fuels. EPA's Energy Star program is fabulous. I'd like to see a similar effort for AFVs with adequate funding.

- EPA and DOE cooperation needs to be extended down to the state level, so that DOE and EPA state-based/regional offices work together on alternative fuels issues.

- Regarding PNGV, some OEMs are in it, some are not. There are barriers at the state and federal level against foreign-owned OEMs. I'd like these to be removed.

- Federal and state government agencies and offices should "live it" [the policies they want to promote]. Buy AFVs, fuel them with alternative fuels.. Fleet operators don't want to change. But, we need leadership. EPA should "walk the talk." Live it, as a choice. Experience the barriers first hand.

- EPA is not proactive on alt fuels. If EPA can't do it under a Democratic White House, then how can anything be done? EPA must become more proactive.

- What is an environmentally-friendly car? Does it mean tailpipe emissions, GHGs, water impacts? If the Energy Star model could be applied to cars – must specify what constitutes "emissions" or "efficiency." But – must do so, openly. If so, there is a potential that Ford's "greenwashing" [e.g.] would be exposed.

- EPA has a program of $100 million to promote clean, alternative fuels, through the Clean Fuels Formula Grant Program, for transit operators. The Administration has taken no stand on this. The Administration must stand behind its veto power.

- States look to EPA to provide a credible model to plug in AFV use, to quantify emission benefits. So we recommend that EPA expedite the delivery of the "Air Cred" model, along with guidance, so that all states can use this tool. Plus, we'd like to see EPA expand this model – it should include particulate matter benefits, for example.

- EPA should work more intensely with GSA on procuring AFVs for federal fleets.

- EPA needs to set up a framework for emissions trading between mobile and stationary sources. For example, the value of the NOx credits could be used to reduce the price differential between a conventional and an alternatively-fueled vehicle.

- Need dedicated AFVs to maximize the environmental benefits. Do bi-fuel AFV incentives really increase AF infrastructure or the number of AF refueling sites? Yet, bi- and flexi-fueled vehicles get the [AMFA] CAFE credit. Since bi-fuel vehicles certify at gasoline standards, maybe EPA could offer a partial CAFE credit for FFVs that are LEV on gasoline, and ULEV on the alternative fuel.

- When CNG and gasoline vehicles are tested on the FTP, it is at ambient air pressure and temperature – between 72 degrees to 80 degrees. However, if you test those same vehicles on the FTP at 0 degrees to 20 degrees ambient air temperature, you would get much different results. So, EPA needs to develop more "real world" modeling for different fuels, at higher and lower ambient air conditions. This might show a much greater emissions difference, between the gasoline vehicle, and the AFV.

- There is a "public fear" of alternative fuels. Memo 1-A provides an "incentive" for converting AFVs for only two years. EPA needs to send a clear message that it will support the AFV-related industry, at least until people understand AFVs, and aren't fearful of alternative fuels.

POST-WORKSHOP COMMENTS

Responses to Questionnaire:

What issues needed to be raised or emphasized more, during the workshop?

- Fuels - fuel specifications for NGVs
  allow reformulated gasoline to be an alternative fuel, under the CAAA

- Incentives - give to the buyers of the fuels
  for the drivers as well as the OEMs, fuel provider, and fleet owner/operator
  centralized pooling of information on rebates and incentives

- Regulation - need a decision on Memo 1A
  regulations that EPA could implement to create AFV demand
  guidance on current status of aftermarket conversions for NGV

- Coordination- cross-functional and interagency work group or task force, of fuel providers, stakeholders, experts, etc.
  no input or participation on panel from petroleum industry, or from electrical utilities, as an AF provider
  figure out how to get petroleum-producing entities to the table and offer their solutions
  all the issues that raised are important; what EPA does to address them is critical. Have EPA attend monthly, quarterly, coalition meetings

- Infrastructure- more discussion on how to build the infrastructure – specific suggestions, brainstorming ideas, etc.

- Strategy- an integrated energy/environment approach is a strategy most needed for advancing alternative fuels and AFVs

What actions would you like to see taken by EPA to address the infrastructure problem?

- Outreach- get involved with infrastructure planning and workshops
  coordinate with other federal agencies to get "federal level" commitments as well as to coordinate with, and provide leadership to, states
  do more public education on clean air vehicles
  do more public education; help state environmental agencies push infrastructure
  have similar meetings like this, possibly quarterly or twice a year

- Incentives- provide money to companies willing to own and operate AF stations
  provide emission tax credits for companies that sell alt fuels
  GSA procurement of AFVs
  develop mobile/stationary source trading (i.e., Emission Reduction Credits or ERCs)
  stress with federal and state legislatures the importance of offering refueling incentives to make AFVs work
  improve the installation credits
  provide funding, assist with securing refueling sites, facilitate partnerships with states to have infrastructure more readily available

- Regulatory- work with DOT to come to a good decision for CAFE [AMFA} credit. OEMs need this credit to keep working on AFVs work with DOE to mandate that federal agencies must use alternative fuels

What actions would you like to see your organization take to address the infrastructure problem?

- Fuels- find a means to improve CNG quality, inexpensively

- Funding- provide stronger support/funding from fuel providers, gas and oil companies continue seeking funds to build AF stations. Market funds to entice fuel retailers to build AF refueling stations lobby for state and feral financial incentives for AFVs

- Coordination- bring the fuel providers together – ask them what it will take to advance AF
  bring fuel retailers into the discussions
  become a member of the Alliance for Clean Air and Transportation
  federal agencies (DOE/DOT/EPA) need a coordinated, decisive plan to promote AFVs and AF
  my firm intends to be very active in getting the message disseminated on Capitol Hill, and in participating in, and building, supportive coalitions
  work with fuel providers and local commercial fleets
  more backing [for AFVs] by the union

Do you think another/more workshops would be beneficial?

- Yes, and - updates on these, maybe through Clean Cities
  make it mandatory
  this was extremely beneficial, and others would be as well
  make them quarterly, and focused on the specific topics addressed today

- Yes, but - invite fuel retailers for their input, along with the auto OEMs
  need petroleum representatives and federal DOT people in attendance

use a different format
include specific infrastructure session on what incentives needed to lower business risk, and make it profitable to install/operate infrastructure
each registered representative should be identified and in attendance!
need more room

What upcoming conferences would you like to suggest as a good time/place to hold an additional EPA alternative fuels meeting?

- 2001 Clean Cities Conference in Philadelphia
- DOE-sponsored [Clean Cities] "advancing the choice" events; quarterly, monthly meetings of Clean Cities Coalitions
- Federal Fleet Conference in August, 2000
- Natural Gas Vehicle Coalition Conference in Las Vegas, September 16 - 18 (2 responses)
- There are lots of "reinvention" conferences taking place; also, increasing interest in EPA's performance trade rulemaking. However, many of these have focused on stationary sources, rather than on mobile sources.

What state/regional laws/programs are working well, and you would like in your state/region?

- AZ- the programs in AZ and in CO
  the tax credit, and refunds on AFV purchases
  the tax credits and grants for both on-site and public access AF refueling stations
  the incentive on AFV registrations
- CA- the CA-type initiative
- Federal-states such as NY, PA, CO, have been very innovative and have made excellent inroads. EPA should build upon this "live data," and provide leadership mandate requiring the installation of EV chargers and CNG hookups for vehicles, (e.g., requirements in the building codes) delay the CAFE [AMFA] decision and tell OEMs if there aren't more AF stations and alternative fuel use by next year, that the credit will be gone. The OEMs don't want to lose it.

What state/regional laws/programs are <u>not</u> working well?

- Regulations- there are not enough laws/programs/regulations
  need to speed up the mobile/stationary trading plan
  need more mandates and regulations <u>requiring</u> AFV use
  CMAQ and SIP rules aren't working well

- Fuels- CARB's CNG specification. Natural gas in many parts of the state does not meet this specification, but just by a slight amount, not enough to affect emissions. However, the failure to meet the spec is "exterminating" the market in these areas.

- Incentives- tax credits work well for individuals; grants work best for private business federal taxes on state incentives (grants/referral monies) doesn't help EPA needs to be more forthcoming with funding and information. It seems as if EPA is just leveraging the PR and notoriety that DOE has worked hard to establish over the past 8 - 10 years.